APPROVED REGULATION OF THE STATE

ENVIRONMENTAL COMMISSION

LCB File No. R036-19

Filed October 30, 2019

EXPLANATION – Matter in ***italics*** is new; matter in brackets [~~omitted material~~] is material to be omitted.

AUTHORITY: §1, NRS 445A.425 and 445A.520.

A REGULATION relating to water quality; revising the standards for cadmium that are applicable to certain designated waters in this State; and providing other matters properly relating thereto.

Legislative Counsel's Digest:

Existing law requires the State Environmental Commission to adopt regulations establishing the standards of water quality and amounts of waste which may be discharged into the waters of this State. (NRS 445A.425) Each standard adopted by the Commission must ensure a continuation of the designated beneficial use or uses applicable to the body of water to which the standard applies. (NRS 445A.520)

Existing regulations set forth the standards for toxic materials applicable to certain designated waters of this State. (NAC 445A.1236) This regulation revises the standards for cadmium.

Section 1. NAC 445A.1236 is hereby amended to read as follows:

445A.1236 1. Except for waters which have site-specific standards for toxic materials or as otherwise provided in this section, the standards for toxic materials prescribed in subsection 2 are applicable to the waters specified in NAC 445A.123 to 445A.2234, inclusive. The following criteria apply to this section:

(a) If the standards are exceeded at a site and are not economically controllable, the Commission will review and may adjust the standards for the site.

(b) If a standard does not exist for each designated beneficial use, a person who plans to discharge waste must demonstrate that no adverse effect will occur to a designated beneficial use. If the discharge of a substance will lower the quality of the water, a person who plans to discharge waste must meet the requirements of NRS 445A.565.

(c) If a criterion is less than the detection limit of a method that is acceptable to the Division, laboratory results which show that the substance was not detected shall be deemed to show compliance with the standard unless other information indicates that the substance may be present.

2. The standards for toxic materials are:

Chemical	Municipal or Domestic Supply (µg/L)	Aquatic Life[1,2] (µg/L)	Irrigation (µg/L)	Watering of Livestock (µg/L)
INORGANIC CHEMICALS[3]				
Antimony	146[a]	-	-	-
Arsenic	50[b]	-	100[c]	200[d]
1-hour average	-	340[f,(4)]	-	-
96-hour average	-	150[f,(4)]	-	-
Barium	2,000[b]	-	-	-
Beryllium	0[a]	-	100[c]	-
Boron	-	-	750[a]	5,000[d]
Cadmium	5[b]	-	10[d]	50[d]
1-hour average	-	$(1.136672-\{\ln(\text{hardness})(0.041838)\})^* e^{[(1.0166)(0.9789\{\ln(\text{hardness})\}[-3.924)f,(4)]-3.866)h,(4)}$	-	-
96-hour average	-	$(1.101672-\{\ln(\text{hardness})(0.041838)\})^* e^{[(0.7409)(0.7977\{\ln(\text{hardness})\}[-4.719)f,(4)]-3.909)h,(4)}$	-	-
Chromium (total)	100[b]	-	100[d]	1,000[d]
Chromium (VI)	-	-	-	-
1-hour average	-	16[f,(4)]	-	-
96-hour average	-	11[f,(4)]	-	-
Chromium (III)	-	-	-	-
1-hour average	-	$(0.316) * e^{(0.8190\{\ln(\text{hardness})\} + 3.7256) f,(4)}$	-	-
96-hour average	-	$(0.860) * e^{(0.8190\{\ln(\text{hardness})\} + 0.6848) f,(4)}$	-	-
Copper	-	-	200[d]	500[d]
1-hour average	-	$(0.960) * e^{(0.9422\{\ln(\text{hardness})\} - 1.700) f,(4)}$	-	-
96-hour average	-	$(0.960) * e^{(0.8545\{\ln(\text{hardness})\} - 1.702) f,(4)}$	-	-

Chemical	Municipal or Domestic Supply (µg/L)	Aquatic Life[1,2] (µg/L)	Irrigation (µg/L)	Watering of Livestock (µg/L)
Cyanide	200[a]	-	-	-
1-hour average	-	22[f,(5)]	-	-
96-hour average	-	5.2[f,(5)]	-	-
Fluoride	-	-	1,000[d]	2,000[d]
Iron	-	-	5,000[d]	-
96-hour average	-	1,000[f]	-	-
Lead	50[a,b]	-	5,000[d]	100[d]
1-hour average	-	$(1.46203-\{\ln(\text{hardness})(0.145712)\})^{*} e^{(1.273\{\ln(\text{hardness})\}-1.460)}$ [f,(4)]	-	-
96-hour average	-	$(1.46203-\{\ln(\text{hardness})(0.145712)\})^{*} e^{(1.273\{\ln(\text{hardness})\}-4.705)}$ [f,(4)]	-	-
Manganese	-	-	200[d]	-
Mercury	2[b]	-	-	10[d]
1-hour average	-	1.4[f,(4)]	-	-
96-hour average	-	0.77[f,(4)]	-	-
Molybdenum	-	-	-	-
1-hour average	-	6,160[g]	-	-
96-hour average	-	1,650[g]	-	-
Nickel	13.4[a]	-	200[d]	-
1-hour average	-	$(0.998) * e^{(0.8460\{\ln(\text{hardness})\}+2.255)}$ [f,(4)]	-	-
96-hour average	-	$(0.997) * e^{(0.8460\{\ln(\text{hardness})\}+0.0584)}$ [f,(4)]	-	-
Selenium	50[b]	-	20[d]	50[d]
1-hour average	-	20[a]	-	-
96-hour average	-	5.0[f]	-	-
Silver	-	-	-	-
1-hour average	-	$(0.85) * e^{(1.72\{\ln(\text{hardness})\}-6.59)}$ [f,(4)]	-	-
Sulfide (undissociated hydrogen sulfide)	-	-	-	-
96-hour average	-	2.0[f]	-	-
Thallium	13[a]	-	-	-
Zinc	-	-	2,000[d]	25,000[d]
1-hour average	-	$(0.978) * e^{(0.8473\{\ln(\text{hardness})\}+0.884)}$ [f,(4)]	-	-
96-hour average	-	$(0.986) * e^{(0.8473\{\ln(\text{hardness})\}+0.884)}$ [f,(4)]	-	-
ORGANIC CHEMICALS				
Acrolein	320[a]	-	-	-
1-hour average	-	3[f]	-	-
96-hour average	-	3[f]	-	-
Aldrin	0[a]	-	-	-
1-hour average	-	3.0[f]	-	-
alpha-Endosulfan	-	-	-	-
1-hour average	-	0.22[f]	-	-
96-hour average	-	0.056[f]	-	-
beta-Endosulfan	-	-	-	-
1-hour average	-	0.22[f]	-	-
96-hour average	-	0.056[f]	-	-
Benzene	5[b]	-	-	-
Bis (2-chloroisopropyl) ether	34.7[a]	-	-	-
Chlordane	0[a]	-	-	-
1-hour average	-	2.4[f]	-	-
96-hour average	-	0.0043[f]	-	-
Chloroethylene (vinyl chloride)	2[b]	-	-	-

Chemical	Municipal or Domestic Supply (µg/L)	Aquatic Life[1,2] (µg/L)	Irrigation (µg/L)	Watering of Livestock (µg/L)
Chlorpyrifos	-	-	-	-
1-hour average	-	0.083[f]	-	-
96-hour average	-	0.041[f]	-	-
2,4-D	100[a,b]	-	-	-
DDT & metabolites	0[a]	-	-	-
4,4'-DDT	-	-	-	-
1-hour average	-	1.1[f,(6)]	-	-
96-hour average	-	0.001[f,(6)]	-	-
Demeton	-	-	-	-
96-hour average	-	0.1[f]	-	-
Diazinon	-	-	-	-
1-hour average	-	0.17[f]	-	-
96-hour average	-	0.17[f]	-	-
Dibutyl phthalate	34,000[a]	-	-	-
m-dichlorobenzene	400[a]	-	-	-
o-dichlorobenzene	400[a]	-	-	-
p-dichlorobenzene	75[b]	-	-	-
1,2-dichloroethane	5[b]	-	-	-
1,1-dichloroethylene	7[b]	-	-	-
2,4-dichlorophenol	3,090[a]	-	-	-
Dichloropropenes	87[a]	-	-	-
Dieldrin	0[a]	-	-	-
1-hour average	-	0.24[f]	-	-
96-hour average	-	0.056[f]	-	-
Di-2-ethylhexyl phthalate	15,000[a]	-	-	-
Diethyl phthalate	350,000[a]	-	-	-
Dimethyl phthalate	313,000[a]	-	-	-
4,6-dinitro-2-methylphenol	13.4[a]	-	-	-
Dinitrophenols	70[a]	-	-	-
Endosulfan	75[a]	-	-	-
Endrin	0.2[b]	-	-	-
1-hour average	-	0.086[f]	-	-
96-hour average	-	0.036[f]	-	-
Ethylbenzene	1,400[a]	-	-	-
Fluoranthene (polynuclear aromatic hydrocarbon)	42[a]	-	-	-
Guthion	-	-	-	-
96-hour average	-	0.01[f]	-	-
Heptachlor	-	-	-	-
1-hour average	-	0.52[f]	-	-
96-hour average	-	0.0038[f]	-	-
Heptacholor Epoxide	-	-	-	-
1-hour average	-	0.52[f]	-	-
96-hour average	-	0.0038[f]	-	-
Hexachlorocyclopentadiene	206[a]	-	-	-
Isophorone	5,200[a]	-	-	-
Lindane	4[b]	-	-	-
1-hour average	-	0.95[f]	-	-
Malathion	-	-	-	-
96-hour average	-	0.1[f]	-	-
Methoxychlor	100[a,b]	-	-	-
96-hour average	-	0.03[f]	-	-
Mirex	0[a]	-	-	-
96-hour average	-	0.001[f]	-	-

Chemical	Municipal or Domestic Supply (µg/L)	Aquatic Life[1,2] (µg/L)	Irrigation (µg/L)	Watering of Livestock (µg/L)
Monochlorobenzene	488[a]	-	-	-
Nitrobenzene	19,800[a]	-	-	-
Nonylphenol	-	-	-	-
1-hour average	-	28[f]	-	-
96-hour average	-	6.6[f]	-	-
Parathion	-	-	-	-
1-hour average	-	0.065[a]	-	-
96-hour average	-	0.013[a]	-	-
Pentachlorophenol	1,010[a]	-	-	-
1-hour average	-	$e^{1.005(pH) - 4.869}$[f]	-	-
96-hour average	-	$e^{1.005(pH) - 5.134}$[f]	-	-
Phenol	3,500[a]	-	-	-
Polychlorinated biphenyls (PCBs)	0[a]	-	-	-
96-hour average	-	0.014[f]	-	-
Silvex (2,4,5-TP)	10[a,b]	-	-	-
Tetrachloromethane (carbon tetrachloride)	5[b]	-	-	-
Toluene	14,300[a]	-	-	-
Toxaphene	5[b]	-	-	-
1-hour average	-	0.73[a]	-	-
96-hour average	-	0.0002[a]	-	-
Tributyltin (TBT)	-	-	-	-
1-hour average	-	0.46[f]	-	-
96-hour average	-	0.072[f]	-	-
1,1,1-trichloroethane (TCA)	200[b]	-	-	-
Trichloroethylene (TCE)	5[b]	-	-	-
Trihalomethanes (total)[7]	100[b]	-	-	-

Footnotes:

(1) One-hour average and 96-hour average concentration limits may be exceeded only once every 3 years. See reference a.

(2) "Hardness" is expressed as mg/L $CaCO_3$; and "e" refers to the base of the natural logarithm whose value is 2.718.

(3) The standards for metals are expressed as total recoverable, unless otherwise noted.

(4) This standard applies to the dissolved fraction.

(5) This standard is expressed as free cyanide.

(6) This standard applies to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).

(7) The standard for trihalomethanes (TTHMs) is the sum of the concentration of bromodicholoromethane, dibromocholoromethane, tribromomethane (bromoform) and trichloromethane (chloroform). See reference b.

References:

a. U.S. Environmental Protection Agency, Pub. No. EPA 440/5-86-001, *Quality Criteria for Water* (Gold Book) (1986).

b. Federal Maximum Contaminant Level (MCL), 40 C.F.R. §§ 141.11, 141.61 and 141.62 (1992).

c. U.S. Environmental Protection Agency, Pub. No. EPA 440/9-76-023, *Quality Criteria for Water* (Red Book) (1976).

d. National Academy of Sciences, *Water Quality Criteria* (Blue Book) (1972).

e. Not used to avoid confusion with "e" as a natural logarithm.

f. U.S. Environmental Protection Agency, *National Recommended Water Quality Criteria*, May 2009.

g. Nevada Division of Environmental Protection, *Aquatic Life Water Quality Criteria for Molybdenum,* Tetra Tech, Inc., (June 2008).

h. U.S. Environmental Protection Agency, Pub. No. EPA-820-R-16-002, Aquatic Life Ambient Water Quality Criteria Cadmium - 2016, March 2016.

Permanent Regulation - Informational Statement

A Permanent Regulation Related to Environmental Programs

Legislative Review of Adopted Permanent Regulations as Required by Administrative Procedures Act, NRS 233B.066

State Environmental Commission
Permanent No: R036-19

Permanent Regulation R036-19:

Nevada Revised Statute (NRS) 445A.425 establishes the authority of the State Environmental Commission (SEC) to adopt regulations to carry out provisions of NRS 445A.300-445A.730, including standards of water quality and the amounts of waste that may be discharged into waters of the State. NDEP amended Nevada Administrative Code (NAC) 445A.1236 to align with the most current recommended numeric criteria published by the U.S. Environmental Protection Agency (EPA) for cadmium to protect the aquatic life beneficial use.

SPECIFIC CHANGES:

Nevada Revised Statute (NRS) 445A.425 established the authority of the State Environmental Commission to adopt regulations to carry out provisions of NRS 445A.300-445A.730, including standards of water quality and the amounts of waste that may be discharged into waters of the State. The NDEP is proposing to amend Nevada Administrative Code (NAC) 445A.1236, to align with the most current recommended numeric criteria published by the U.S. Environmental Protection Agency (EPA) for cadmium to protect the aquatic life beneficial use. The proposed revisions include changing values of exponents in the hardness-based equations for calculating values of acute and chronic criteria for cadmium (dissolved). In addition, a footnote will be added to the toxics table (445A.1236) to provide the EPA reference (EPA 2016b).

1. Need for Regulation:

EPA's regulations for water quality standards at 40 CFR 131.11(a)(1) require states to adopt protective criteria that are based on sound scientific rationale. Nevada's existing water quality criteria for cadmium to protect the aquatic life beneficial use are based on EPA criteria published in 2001.

Since 2001, EPA identified more than 100 new studies with toxicity data related to acute and chronic exposures of aquatic life to cadmium for 75 new species and 49 new genera. EPA compiled these data to derive the updated numeric criteria for cadmium in 2016 (EPA 2016). Nevada's current criteria for cadmium were adopted in 2006, based on EPA's 2001 criteria values for cadmium. The updated equations (EPA 2016)

have the effect of increasing the criteria values for chronic exposure and slightly decreasing the criteria values for acute exposure. The increases to chronic criteria will lessen the burden on dischargers; the slight decreases in acute criteria will have a minimal effect.

2. A description of how public comment was solicited, a summary of public response and an explanation of how other interested persons may obtain a copy of the summary.

On June 6, 2019, June 7, 2019, & June 10, 2019 NDEP conducted public workshops on regulation R036-19.

Thursday, June 6, 2019 9:00 - 11:00 AM Bryan Building, 3rd Floor Humboldt Room 901 S. Stewart Street Carson City, Nevada 89701	Friday, June 7, 2019 9:15 - 11:00 AM Elko County Library 720 Court Street Elko, NV 89801	Monday, June 10, 2019 1:00 - 3:00 PM Wetlands Park 7050 E. Wetlands Park Lane Las Vegas, NV 89122

A total of twenty-one (21) members of the public attended the workshops, in total.

Questions from the public presented at the workshop were addressed by NDEP staff; summary minutes of the workshop are posted on the SEC website at: http://sec.nv.gov/main/hearing_1019.htm.

Following the workshop, the SEC held a formal regulatory hearing on October 2, 2019 at the Nevada Legislative Building, room 3138, located at 401 South Carson Street and video-conferenced in Las Vegas at the Grant Sawyer Building, Room 4401, located at 555 East Washington Ave. A public notice for the regulatory meeting and a copy of the proposed regulation were posted at the State Library in Carson City, at NDEP offices located in both Carson City and Las Vegas, at all county libraries throughout the state, and provided to the SEC email distribution list. The public notice was also posted at the Division of Minerals in Carson City, at the Department of Agriculture, on the LCB website, on the Division of Administration website, and on the SEC website.

The agenda and information where supporting documents could be located were posted at NDEP offices located in both Carson City and Las Vegas, at the Division of Minerals in Carson City, at the Department of Agriculture, on the LCB website, on the Division of Administration website, on the SEC website, and provided to the SEC email distribution list.

The public notice for the proposed regulation was published in the Las Vegas Review Journal and Reno Gazette Journal newspapers once a week for three consecutive weeks prior to the SEC regulatory meeting. Other information about this regulation was made available on the SEC website at: http://sec.nv.gov/main/hearing_1019.htm .

3. The number of persons who attended the SEC Regulatory Hearing:

(a) Attended October 2, 2019 hearing: 21 (approximately)
(b) Testified on this Petition at the hearing: 0
(c) Submitted to the agency written comments: 0

4. A description of how comment was solicited from affected businesses, a summary of their response, and an explanation of how other interested persons may obtain a copy of the summary.

Comments were solicited from affected businesses through e-mail, three public workshops and at the October 2, 2019 SEC hearing as noted in number 2 above.

5. If the regulation was adopted without changing any part of the proposed regulation, a summary of the reasons for adopting the regulation without change.

The regulation was adopted without change because the public and the SEC were satisfied with the proposed amendments.

6. The estimated economic effect of the adopted regulation on the business which it is to regulate and on the public.

Regulated Business/Industry. The proposed revisions may have a slight beneficial effect on business by lessening the burden on dischargers for the chronic cadmium criterion. The revisions are unlikely to have any adverse effect on business.

Public. The regulation will have no economic impact on the public.

7. The estimated cost to the agency for enforcement of the adopted regulation.

Enforcing Agency. There will be no additional costs to the agency.

8. A description of any regulations of other state or government agencies which the proposed regulation overlaps or duplicates and a statement explaining why the duplication or overlapping is necessary. If the regulation overlaps or duplicates a federal regulation, the name of the regulating federal agency.

The adopted amendments do not overlap, duplicate or conflict with any regulations of other government agencies.

9. If the regulation includes provisions which are more stringent than a federal regulation, which regulates the same activity, a summary of such provisions.

The regulation is no more stringent than what is established by federal law.

10. If the regulation provides a new fee or increases an existing fee, the total annual amount the agency expects to collect and the manner in which the money will be used.

The regulation does not address fees.